TIPS FOR FIRE SUPRESSION DESIGN:

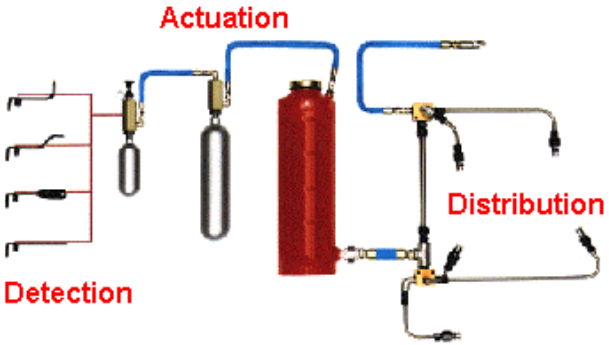
- Design water spray systems to deliver 0.75 gpm of water per square foot of belt with a residual pressure of at least 10 psig to the most remote nozzle. Wet pipe sprinklers should be designed to provide at least 10 psig residual pressure to the most remote four flowing heads.
- Use accepted design practices established by MSHA when designing fire suppression systems. This should include considerations for testing and maintenance.
- Locate spray nozzles or sprinkler heads for maximum effectiveness.
- Flexible hoses, such as hydraulic hoses, used to feed sprinklers or spray nozzles should be of an MSHA-approved flame resistant construction.

It Happened...

On January 10, 1990, a fire occurred on the face behind the headgate drum of the shearer as it was cutting drawrock. The shearer had been stopped previously to check the oil in the gearcase due to potential overheating. Flames were extinguished in 1-2 minutes with the fire suppression sprays and a wash down hose.

On June 18, 1990, belt slippage occurred when a rock lodged between the belt and the take-up roller. Friction at the head pulley caused a fire. The water spray system did not activate due to a malfunctioning solenoid. Two fire extinguishers and a fire hose were used to fight the fire.

On November 24, 1994, a fire occurred at a belt drive. Smoke was diverted to a return air course. A fire fighting crew used fire extinguishers and water to extinguish the blaze. The fire suppression system had been activated and controlled the fire.



Example of a basic fire suppression system

Best Practices Fire Protection

Card No. BPFP-4

FIRE SUPPRESSION

FIRE SUPPRESSION SYSTEMS vary in their design and application. All systems except automatic sprinklers should be provided with an emergency manual release that can be operated from a safe, smoke-free location during a fire.

LOCATIONS

Belt Drives	Diesel Fuel Storage Locations
Oil Storage Locations	Mobile Equipment
Battery Charging Stations	Working Sections

- **ALWAYS** report fire suppression system problems to mine management.
- **ALWAYS** keep fire suppression detectors in working order.
- **ALWAYS** check to ensure that your actuation system is operable.
- **ALWAYS** protect hose and valve fittings from damage.
- **ALWAYS** provide regulators for high pressure water applications.
- **ALWAYS** use automatic sprinklers whenever possible.
- **ALWAYS** keep manual actuators unobstructed.
- **ALWAYS** check for signs of physical damage or conditions that would prevent system operation.

- **NEVER** keep valves to your suppression system turned off, unless maintenance is being performed and the area is manned.
- **NEVER** allow nozzles and sprinkler heads to become obstructed.
- **NEVER** allow untrained employees to maintain your fire suppression system

U.S. Department of Labor
Mine Safety and Health Administration
J. Davitt McAteer, Assistant Secretary